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ABSTRACT

The outcome of a study workshop with participants from 11 Asian and Pacific countries, this report is broadly divided into four chapters. The first gives an overview of the philosophical concept and challenges of distance education at the higher education level in the context of this region. The second chapter contains synopses of reports presented by the participants on experiences and developments in distance education in each of their countries: (1) Australia; (2) Bangladesh; (3) China; (4) India; (5) Indonesia; (6) Pakistan; (7) Papua New Guinea; (8) the Philippines; (9) Sri Lanka; (10) Thailand; and (11) the Socialist Republic of Viet Nam. Chapter three features two institutions of distance education, Darling Downs Institute of Advanced Education (DDIAE) and Sukhothai Thammathirat Open University (STOU), and describes their operations in contrasting situations. The final chapter deals with planning, operating, and evaluating a distance education system. This part of the workshop, held at DDIAE, involved the participants in discussion and practical work. (THC)

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DISTANCE EDUCATION IN HIGHER EDUCATION

Inter-country study visit-cum-mobile workshop
Sukhothai Thammathirat Open University, Thailand
and Darling Downs Institute of Advanced Education, Australia
6-16 September 1983

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Unesco Regional Office for Education
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PREFACE

The present publication, Distance Education in Higher Education, is the outcome of an eleven-day inter-country study visit-cum-mobile workshop at the Sukhothai Thammathirat Open University (STOU) in Thailand and the Darling Downs Institute of Advanced Education (DDIAE) in Australia from 6 to 16 September 1983. Organized jointly by the Unesco Regional Office for Education in Asia and the Pacific (ROEAP) and these two institutions within the framework of the Regional Co-operative Programme in Higher Education for Development, eleven participants, one from each country, joined the study visit. Besides, several staff members of both STOU and DDIAE performed key roles as organizers, discussion leaders and academic guides throughout the programme.

The book is broadly divided into four chapters. The first chapter gives an overview of the philosophical concept and challenges of distance education at the higher education level in the context of the Asia and Pacific region. The chapter has been developed on the basis of the paper presented by Prof. Wichit Srisa-an, Rector, STOU and the discussion that followed at the workshop.

Chapter two contains synopses of reports on the experiences and developments in distance education in the participating countries namely Australia, Bangladesh, China, India, Indonesia, Pakistan, Papua New Guinea, the Philippines, Sri Lanka, Thailand and the Socialist Republic of Viet Nam. Country reports were delivered by the respective participants.

In chapter three, an attempt has been made to bring out the salient features of two institutions of distance education (DDIAE and STOU) operating in contrasting situations as examples. The participants of the workshop had opportunities to observe and study various aspects of their operations and programmes. The programme of Associate Diploma in Engineering at DDIAE has been highlighted. It was considered by the participants that this is a course which is not generally taught as a part of distance education, but is an area which should be of interest to a number of countries. In case of STOU, the emphasis has been on its operational aspects to demonstrate the experiences of a developing but successful "open university" in the first three critical years of its existence.

The last chapter deals with planning, operating and evaluating a distance education system. This part of the workshop held at DDIAE involved the participants in discussion and practical work. As indicated above, the distance education system was examined under

three headings - planning, operation and evaluation. The participants were given a framework for discussion and then put forward the special considerations of their own countries under each sub-heading. The chapter records a summary of the observations made by them. The summary does not represent the aggregate of the situations in the countries from which the participants came. Their responses should be seen as examples that emerged out of the training exercise they completed in four days. Introduction to the chapter draws its substance from the statement made by Mr. J. Taylor, Head of Instructional Design at DDIAE and the subsequent discussions on it during the workshop.

It must be noted that what has been produced in this book is the collective contribution of the participants and the concerned staff members of STOU and DDIAE. ROEAP expresses its deep gratitude to all of them for their dedication and hard work to make this publication possible. Hopefully it will serve as a useful resource book and training manual.

Chapter One

CHALLENGE OF DISTANCE EDUCATION: AN OVERVIEW

A concept that has influenced the provision of education during the last decade is that of lifelong education, according to which education is considered to be an essential factor in human existence. It is a process and a chain of activities in which man is involved throughout his life. The provision of education in accordance with this concept is intended to meet the needs of society and individuals, regardless of sex or age. Consequently, there have been attempts to search for appropriate ways of providing education at various levels in conformity with the lifelong education principle. The new form of higher education which is of increasing interest to countries throughout the world is the open distance education system.

In developing countries, human resource development is of crucial importance. Such development not only increases the quantity of trained manpower in response to national needs, but it also improves the quality of life and work for people generally. As human resources are developed, rising expectations are engendered in the people for further education. But opportunities for education at the highest level are limited because resources are limited. Under these conditions of scarcity, inequality of educational opportunities naturally arises. Such inequality can be erased only by efforts to democratize education. Thus various models and methods must be explored to make higher education available to the masses. But it is essential that these approaches be economical and efficient so as not to exceed limited resources.

One approach used to expand educational opportunities is regionalization, the establishment of universities in different geographical regions of a country. A second approach is to establish a multi-campus university system. Here campuses of a single university are located in centres of population in various parts of the country. Examples are found in Thailand, the Philippines and Indonesia. A third approach is to provide extension or extra-mural studies. A fourth approach is to establish institutions of the community college variety.

But these four approaches, even though they expand educational opportunities considerably, still do not completely solve the inequality problem. They simply cannot reach out to all these local areas and provide true equality of educational opportunity for all the people.

Given this state of affairs, a distance education model has been developed and used in a number of countries as an alternative to the other four methods. Democratization of higher education can be more fully achieved using this model in that education is brought directly into the home. Integrated university-level courses can be provided in order to upgrade working adults in the public and private sectors and to afford high school graduates who live in rural areas the chance to work and study at the same time. Courses can also be made available to those who simply want to further their knowledge without enrolling in a degree or certificate programme. Knowledge is thus disseminated to the people at large.

A university involved in distance teaching does not have its own classrooms but relies instead on an integrated media approach in combination with a network of regional and local study centres. The main media can include printed texts, textbooks, workbooks, the telephone, computing facilities, experimental kits, radio and television broadcasts, and video tapes and course materials recorded on cassette tapes. The various regional and local study centres can provide tutorial and counselling sessions as well as other study facilities for students throughout the country. As well, students may be able to obtain practical experience through work sessions organized with local firms. This is a programme which reaches out to every corner of the nation, offers students a home-based education, and helps improve the quality of life and work for more and more people.

In the past decade many countries in Asia and the Pacific have extended the range of educational opportunities by adopting the open education system and setting up, for this purpose, higher educational institutions of distance learning. All these institutions of distance learning, despite their individual characteristics, do indeed have one aim in common - this is to serve the needs of students seeking to upgrade professional qualifications and/or to acquire a real understanding of the subjects chosen.

At present, a large number of countries in Asia, especially those in the Association of Southeast Asian Nations, have expressed a great interest in providing higher education through distance learning systems. It is to be expected that distance learning institutions will be established in many countries in the near future.

If a country decides to set up a distance teaching organization, it is necessary for it to thoroughly plan the operation. During the planning stage, several questions will arise: Why is it necessary to set up a distance learning university? Will the distance learning university really be able to maintain the same quality and academic standards of those of conventional universities? Will it be worthwhile to invest in this type of university? Will there be much educational wastage as a result? Will the people of the country be

favourably disposed to the distance learning system since they have been accustomed to the classroom system all along? Clear and definite answers to all these questions are needed during the planning stage.

The planning group will not only have the difficult task of setting up the administrative and academic structure of the institution with a distance learning system, but it will also have to collect and analyse all the relevant information and data for the decision-making authorities concerned in order to dispel doubts, convince them of the desirability of setting up such a university, and gain support from the general public. Accordingly, during the project planning phase, several precautionary measures have to be taken to ensure a greater degree of success. There must be a survey of the educational needs of the general public; tests with academics of various universities to verify the efficacy of the distance learning concepts and techniques; a background study into the structure and organization of existing distance learning universities in various countries; a survey of existing infra-structures favourable to the provision of this type of education, such as the postal service and radio and television networks.

The experience of those countries which have set up a distance teaching programme in higher education shows that there are six critical questions which have to be faced. The first one is: Why is it necessary to provide higher education through the distance learning system?

In developing countries, opportunities for education in the traditional system are somewhat limited. Since the level of economic and social development of a society is closely related to its stock of values, attitudes, knowledge and skills, it is essential to have a teaching model that will enable a vast majority of working people to have access to education on a more extensive and egalitarian basis without having to stay away from their jobs to attend classes. The distance learning system can thus be seen as an effective and economical means of extending educational opportunities.

The second point is: For whom is the distance learning intended? Developing countries in Asia have to try to satisfy the rapidly increasing demands for education of both adults and secondary school leavers. The establishment of a tertiary distance teaching institution will serve two main purposes. It will enable adults to undertake university studies, and ensure the availability of places for young adults fresh from secondary schools. For such an institution to provide educational services for these two target populations, so diverse in maturity, background, lifestyle, and motivation, will inevitably constitute a complex problem. Whereas the occupational groups are content with an external studies system that allows them to continue their normal occupations, the young adult groups, having been accustomed to face-to-face teaching and

being still unemployed, may prefer to be internal students in conventional universities. Experience in developing countries shows that even though an institution is open to both working adults and secondary school leavers, distance education is more popular with the former group.

The third point is: How can an appropriate distance learning system be established? Any planning group will probably look for a satisfactory blueprint or a successful precedent to follow. It may study the development and achievements of such institutions as the U.K. Open University, Sukhothai Thammathirat Open University, or the Darling Downs Institute of Advanced Education in Australia, and seek to learn from their experience in teaching at a distance. It is likely that the planning group will come to the conclusion that it is impossible to adopt and imitate any existing model, and that each institution must devise its own distinctive system well-suited to the socio-economic environment of their country.

In some developing countries, mass communication technology may not have as yet attained the desirable degree of progress. As the use of telephone, radio, and television, in particular, may still be limited, greater reliance may have to be placed on correspondence methods than on other media. Since local educational services are scarce and not easily accessible, it is necessary to supplement independent learning with the provision of a greater number of tutorials and opportunities for travelling staff/student contacts.

Another problem relates to publications in foreign languages such as English. As the mother tongue is used as the medium of instruction in many countries, it may be difficult to make use of the existing teaching materials in conjunction with institutions in other countries. Admittedly, this problem may be solved by translations. But, on the whole, the production and development of some self-instructional materials will still have to be undertaken. The exchange of teaching materials among distance learning institutions has been to this stage somewhat limited. What may more readily be achieved is the exchange of technical know-how rather than of teaching materials.

The fourth point is: How can high-quality teaching be maintained and thus a lowering of standards prevented? Many employers and academics, especially those of conventional universities, who have been accustomed to the traditional educational practice, tend to doubt whether it is possible to teach at a distance effectively and claim that the distance learning system is likely to turn out graduates of lower quality than those produced by conventional universities. Some distance teaching institutions have already proved that it is possible to provide education of high quality similar to that of conventional universities. In developing countries, however, a distance teaching institution has to face

constraints of various kinds, such as those previously mentioned. The question is how to convince the public of the effectiveness of teaching at a distance and to win respectability for such a new venture rapidly.

It is possible to achieve respectability in essentially three ways. First it is necessary to include outstanding academics as well as acknowledged leaders from other agencies in virtually all activities. They must serve as planners, curriculum developers, part-time course team members, materials producers, and tutors at supplemental instructional sessions. They can serve as external examiners as well, as in addition to producing course materials, they can write examination questions. Second, it is necessary to go through the accreditation process with various accrediting agencies. Third, respectability may also be enhanced by the quality of instructional materials. There will likely be a general lack of textbooks and a distance teaching institution can help to overcome this deficiency. The institution can produce texts in many different areas, and many of these will eventually be used by other universities. This can help to achieve rapid recognition.

The fifth point is: How can the over-production of graduates be avoided? The dilemma faced by most distance teaching institutions is that, on the one hand, there is a high drop-out rate and that, on the other, there can be such a large number of graduates that the supply exceeds the demand. Educational economists tend to criticize investment in distance teaching by pointing out that the wastage rate in such institutions is higher than in conventional universities. At the same time, there is a concomitant fear that, if these institutions can teach effectively, there will be an overabundance of graduates, because the intake of students will be greater than that at conventional institutions of higher education. The problem is then, that:

- open distance teaching institutions will provide greater educational opportunities for many people;
- if they teach efficiently, there may be an oversupply of graduates.

Each nation must thus maintain a balance between offering greater educational opportunities to its people and producing too many graduates who cannot find employment.

The sixth and last point is: What is the key to success? The provision of higher education through the distance learning system owes its success or failure to the personnel available, especially academic staff. In developing countries, there is already a shortage of well-qualified staff in conventional universities. With the establishment of another institution, the staff shortage problem becomes more serious and selection even more restricted. In the case of a distance teaching institution, even if the greatest care has been taken in recruiting really well-qualified

staff, there is still the problem of re-orientating them from the traditional educational practice with which they have been acquainted. It can be a difficult task to transform them into enthusiasts for, and experts in, the new system. It is not an exaggeration to say that distance learning has revolutionized higher education, which used to be considered as a 'sacred rite practised behind closed doors' for centuries. Academics involved in the distance learning system will therefore be required to have exceptional courage and skills. One of the most important tasks that distance learning institutions in developing countries have to undertake from the outset is that of creating new attitudes and values. In other words, academics should undergo a kind of conversion of the soul to become a new breed of academics favourably disposed to the distance learning system. Such a task can be demanding.

If the development of personnel is the key to success, then co-operation among institutions of distance learning should be in the form of sharing resources and expertise so as to enrich the teaching staff's knowledge and experience, and provide them with new technical know-how. This is something on which great emphasis should be placed. To have high-quality distance learning teachers is undoubtedly the key to success.

In conclusion, it may be stated that the distance learning system is an innovation that will facilitate the democratization of higher education in mass society. It is easy to say this, but difficult to put it into practice. Nevertheless, hard as it may seem, it is both a challenge that has to be accepted, and a mission that has to be accomplished.

Chapter Two

DISTANCE EDUCATION AT A GLANCE IN SOME COUNTRIES OF ASIA AND THE PACIFIC

AUSTRALIA

Present status

Distance education at the tertiary level in Australia is organized on a regional basis. There are some five universities and ten colleges of advanced education involved. For a number of reasons this situation is likely to continue. Enrolments by external students in these institutions vary from about one thousand students to six thousand.

All distance teaching institutions in Australia are also involved in on-campus or face-to-face teaching as well. External students study the same courses and sit for the same examinations as on-campus students. The only difference is the teaching technique which is used to deliver information to the student.

Distance teaching institutions use a variety of organizational structures and a wide range of teaching techniques. For example, some institutions use course teams supported by instructional specialists to prepare teaching materials while others leave such preparation in the hands of the teacher. Again, some institutions teach at a distance with a minimum of face-to-face contact between teacher and students while others tend to use regional study centres with local tutors to maximize such contact.

Intended developments

Most institutions in Australia use printed materials as their main distance teaching technique. The standard of these materials has improved a great deal in recent years and generally reached a satisfactory level. Institutions are now turning towards two new techniques. These are computer-based teaching and communications by satellite.

Australia plans to launch its first satellite in mid-1985 and the distance teaching institutions are anxious to make use of it. However, at least in the early stages, it is unlikely that these institutions will have direct access. The greatest immediate advantage is likely to be improved telecommunications provided by the national body, Telecom.

The main thrust in the computer area is likely to be in computer-managed learning. This means that courses will be written in sections or modules. At the completion of each module, a student will be required to attend a study centre and take a test on the computer terminal. Depending on his result, he may be permitted to go on to the next module or be required to do further study before retaking the test.

Current issues

The Australian Commonwealth Tertiary Education Commission recently published a report on Distance Education in Australia. This report indicated that the greatest need in the area was for greater co-ordination at the national level. Although there was not a great deal of overlap in the preparation and teaching of courses within any of the six states, there was a great deal of overlap between the states. However, the report recommended that the problem should be overcome by the institutions developing their own co-operative programme.

The organization of tertiary distance teaching organizations in the region recently held its biennial conference. The organization is called the Australian and South Pacific External Studies Association, and the theme of the conference was "Challenges facing Distance Education in the Eighties". Again one of the main concerns was the need for greater co-ordination at the national level.

Attrition rates for external students have always been higher than those for internal students, and this is an area which is receiving greater attention. It is hoped that such developments as computer-managed learning and other improvements in information delivery, plus improved student support, will lead to a reduced attrition rate.

BANGLADESH

Present status

For higher education, Bangladesh has been depending almost entirely on the traditional system of teaching at six universities, about 400 colleges and a number of specialized institutions. Off-campus correspondence courses or any other forms of distance teaching are not yet available.

To meet the ever growing social demand for higher education and the increasing need for the trained manpower, distance education holds good prospect in Bangladesh. The fact that the country has a well established postal system, a wide coverage by radio and television (more than 90 per cent in terms of geographical area) and

a single language as the medium of instruction is an added advantage. Use of distance teaching methods may also be seen as a cost-saving device particularly when the opportunity cost for higher education is quite high and the claims from other sectors of education on scarce national resources are so competitive.

Development trends

The Government of Bangladesh is actively considering establishment of a national institute of distance education. In the meantime, some beginning though not strictly for higher education, has been made. Since 1981 curriculum related educational programmes both through radio and television have been in operation on a limited scale. There have also been experimental programmes for upgrading the quality of primary school teachers. At present, the Radio Bangladesh broadcasts a 20-minute programme for secondary schools and a 15-minute programme for primary education a day for five days a week. Similarly, Bangladesh Television offers one 20-minute programme a day for three days for secondary schools and two days for primary schools a week.

With a view to co-ordinating these activities and providing media based technical support, a new institution known as National Institute of Educational Media and Technology was established in April 1983 under the Ministry of Education. This may be regarded as another important step towards realizing the full potential of distance teaching as a means of widening access to and improving quality of education at all levels in Bangladesh.

CHINA

Present status

Higher distance education in China is one of the component parts in China's socialist educational system. In a nation as vast and populous as China, the prospects for the development of distance education are enormous, and recent developments in this field have attracted great interest both at home and abroad. By 1982 the number of students in Television Universities reached 347,200, and a further 200,000 students have been enrolled during 1983. Over one hundred conventional colleges and universities run correspondence courses for more than 160,000 students. The total number of registered students in distance education amounts to 44.3 per cent of the conventional college and university students in China.

Development trends

Staff members in various professions and educated young people waiting for jobs want to continue their education to reach

levels equivalent to those of conventional universities. Graduates from conventional universities want to pursue further studies and to obtain post-graduate qualifications. Because of the rapid developments in science and technology, many people want to update their existing knowledge and qualifications to meet practical working needs. Correspondence radio and T.V. education for higher learning is provided for this purpose.

Problems and issues

Distance education in China still cannot meet the need for study from the broad masses. Due to inadequate facilities, China has not been able to satisfactorily combine correspondence courses and radio and television teaching. Television broadcasts reach only a limited area of China, and reception of signals is often poor in remote or mountainous regions, inhibiting the use of the medium for educational purposes. One problem still to be solved is how to allow rural area students to complete scientific experiments within their courses. At present correspondence students cannot obtain experimental kits directly from universities, and experiments for those T.V. and correspondence students can only be done in the conventional universities and colleges. Also there is not any set of teaching materials which suits the characteristics of correspondence education.

In line with the development of China's socialist construction should come training qualified personnel of various levels and raising their educational qualifications. Alongside the development of conventional universities should be further development of T.V. universities and correspondence colleges and universities. As well as science and technology courses these must offer basic introductory courses in science and liberal arts especially in the fields of finance, economics and law.

To speed up the development of distance education, China has to raise the social status of distance education in higher learning and to provide manpower and necessary facilities to ensure its rapid development.

Sets of teaching materials need to be developed which suit the characteristics of distance education. More qualified full-time teachers are needed.

Although at present development has centred on voice and visual media, to improve distance education China must combine T.V., radio and correspondence education, so as to meet the needs of people of all kinds.

More research into the problems of distance education systems in China needs to be undertaken to further promote development in the field, which in the long term must benefit a quarter of mankind.

INDIA

Present status

Of India's 133 universities (or equivalent), twenty per cent have programmes in distance education, some of which have been in operation for more than 20 years. Teaching techniques include the use of printed materials and well established radio programmes. Students may study at degree level or sub-degree or diploma level using distance education materials.

One stated objective of higher distance education in India is to enable students' access to tertiary education who would otherwise be unable to participate in further education. Particularly this applies to students who have been excluded because of quotas in their local institutions, to those who desire to remain in full-time employment or cannot be spared from the work force, to those in isolated regions, and to women who prefer to remain with their families.

Government guidelines specify certain conditions for distance education. Only one university in each state should be involved in distance education, and the optimum enrolment in each such university should not exceed 10,000.

Post-graduate distance education courses can only be mounted in institutions with considerable experience in graduate teaching. Government financial assistance is provided but students must also pay fees. Despite plans for a greater level of distance education, at present only six per cent of India's tertiary students are enrolled in distance teaching programmes.

Development trends

Plans for a national Open University along the lines of the British Open University began in 1970. Although considered for financing in 1976, plans have been delayed but may be revived in the near future. One State, Andhra Pradesh, has established its own Open University and accepted its first students in mid-1983. Entry qualifications were based on age rather than academic credentials for Arts disciplines, although science degrees specify a higher entry standard.

This Open University operates through regional centres in the State, and students study at these centres rather than through one central institution. Programmes include provision for intensive summer schools for a number of weeks each year.

Detailed studies are under way to facilitate the instruction of distance education programmes in other universities. Three

universities have opened centres of mass education, and satellite technology may be used in future developments.

Problems and issues

Existing correspondence courses are only available in a limited number of disciplines, notably Arts and Commerce. Doubts have been expressed as to the suitability of science-based disciplines for distance teaching programmes. Courses and programmes currently in use have been criticized as hastily prepared and lacking adequate evaluation techniques.

However, there also seem to be many positive benefits. Wider access to tertiary education is afforded through distance education, and national costs will be lower by avoiding the proliferation of new universities and colleges. There is also the potential to upgrade the qualifications of teachers who would otherwise be unable to improve their education.

The main problem is in establishing the credibility of distance teaching in relation to traditional methods. With improvement of the scope and variety of courses, and concentration in printed materials and radio broadcasts rather than more advanced technology, the system should be able to produce a satisfactory standard in its graduates.

INDONESIA

Present status

Indonesia produces 450,000 high school graduates, half of whom wish to enter tertiary institutions, but places are only available for 16,000 in public universities or institutions, and about the same number at the private schools.

At present there is no distance education at the university level, although there are small pilot projects in distance education at the primary level and an "Open High School" with about one thousand students. A correspondence-based upgrading programme for high school teachers started two years ago with 3,000 participants, numbers increasing by 1,200 in 1983, and there is also a correspondence-based teaching certificate for university lecturers.

The continuing expansion of universities, in response to the growing number of potential students and the national requirements for development, has demanded innovative techniques to extend university resources throughout the archipelago. The BKS (Eastern Islands University Association) is one response to these needs. Problems of communication over the great distances in the archipelago will be confronted by using satellite communication systems.

Development trends

A pilot satellite will begin in 1984/85, supporting the project for university, and more broadly, rural development. Analysis suggests that an augmented audio teleconferencing system using the "Palapa" satellite (including telecopier, teleprinter and slow scan T.V.) can assist the Government of Indonesia in reaching national goals. Satellite communications should improve access to higher education throughout the country, and assist faculty members in upgrading their skills to better serve the increasing number of students.

The broad objectives of the project are to demonstrate the applicability and effectiveness of satellite communications technologies and to assist the development of the BKS by means of remote teaching, research, staff upgrading, administration, and technical assistance.

The project will demonstrate how satellite telecom can be used in universities expansion, especially with regard to the planning of an open university, and provide specialized telecommunications to social service agencies throughout Indonesia.

In addition to the BKS campuses, a telecommunication link extends to a tertiary institution in Bandung in central Java and will link in the Ministry of Education in Jakarta.

Another possible area of project activity will be extension of university services from the campuses into surrounding provinces. This activity will require the placement of satellite communications facilities in the countryside to allow demonstration of extension education, educational outreach, teacher upgrading, and similar activities. It is anticipated that other agencies of the Indonesian Government will be encouraged to utilize the system to experiment by means of using a multipoint teleconferencing system to further their continuing activities.

Problems and issues

A full evaluation of the satellite project has yet to be completed, but it seems certain that its uses will extend far beyond those presently attempted. In a nation as geographically diverse as Indonesia, satellite technology has great possibilities. The problem will be in allocating satellite space between the many demands and in developing teaching techniques and materials suitable for this new medium.

PAKISTAN

Present status

The Allama Iqbal Open University is the only Pakistani institution providing education and training at the tertiary level through distance education. Established at Islamabad in 1974, the University differs fundamentally from conventional universities and institutions. At present, out of 65,000 students, about 34,000 students are enrolled in Bachelors and Masters degree level courses.

The University has a three-tiered system consisting of a central headquarters, regional offices and study centres. The central University is responsible for developing and disseminating educational programmes to its network of regional and study centres. Ten regional centres operate in various geographical regions of Pakistan backed up by technical and library services from the central campus, which also provides laboratory workshops and other training facilities which, because of practical considerations, cannot be provided in each study centre.

At present, about 150 study centres have been established throughout the country. These study centres are equipped with radio/T.V. sets and audio cassettes in addition to all relevant course materials. About 1,000 part-time tutors are engaged during a typical semester (normally of six months' duration) for conducting tutorial/practical sessions. Tutors at the study centres are mostly from the staff of the institution in which the study centre is located. These study centres operate under the direct administrative control of the Regional Centres.

Future developments

The educational programme of the University is designed to use non-formal methods. Correspondence units, sent by post to the students, include self-assessment questions and assessable assignments. Radio/T.V. programmes further facilitate the understanding of these lessons. Courses are designed to be used along with radio and television programmes, and are supported by face-to-face tutorials. The University is also planning to offer M.Phil./Ph.D. courses during the year 1984.

Problems and issues

The University is facing financial difficulties in developing new courses and providing equipment in the study centres. The postal services, especially in the far flung areas of Pakistan, are not adequate. Due to lack of transportation in those areas, sometimes the students receive correspondence material quite late, miss the radio/T.V. programmes and are late in submitting their assignments.

All the printing work is done by the Government Printing Press which is normally preoccupied with government work and delays occur in the delivery of university materials. With the completion of the University's printing press by 1984, it is hoped that this problem will be solved.

More study centres are needed if all students are to be afforded equal access to higher distance education in Pakistan.

PAPUA NEW GUINEA

Present status

Distance education is still in its infancy in Papua New Guinea despite planning proposals going back 20 years. The two tertiary institutions, the University of Papua New Guinea and the University of Technology, were established in 1966 and 1969. Distance education programmes were introduced in one university in 1974, but the course offerings remain limited and concentrate on matriculating students for university entry and on the first year of tertiary studies. At present only about 200 students are enrolled in higher distance education courses, but this number is significant in relation to the number of internal students.

The system used combines distance teaching with face-to-face teaching, achieved for some students in after-hour classes at the central university, and for others at three provincial university centres, or through irregular visits from staff to students scattered around the country. External courses are based on internal courses and are usually prepared by internal academic staff assisted by distance education staff, working in teams.

Courses depend mainly on printed materials, supplemented by cassette tapes and face-to-face teaching. Matriculation courses are run through provincial centres, but tertiary level students attend a summer school to complete half of their programme.

Future developments

In the early 1980s serious consideration was given to phasing out higher distance education for logistic and financial reasons. New life has now been injected through the inauguration of provincial university centres. Three have now been established with more to follow. It is envisaged that matriculation will in future be taught solely through these provincial centres, moderated by the parent institution. Local co-ordinators and part-time tutors will be used. Funding for such centres must come totally from provincial governments and business interests.

Distance education in higher education

In the long term the matriculation programme (now taught internally and externally) will be phased out. When this is accomplished, distance education will concentrate on diploma and degree level courses.

Current issues

There are immense problems in establishing an education system in Papua New Guinea, let alone higher distance education. Papua New Guinea is a collection of tropical islands with poor communications. The total population is only three million and the most populous areas, in the Highlands, were not opened to the outside world until the 1930s through to the 1950s. Forty per cent of high school students leave after grade VIII, and only five schools carry through to grade X. Four national high schools enroll students for grades XI and XII.

Eighty per cent of Papua New Guineans still depend for their living on subsistence agriculture, and although new-found mineral wealth has bolstered the economy, 26 per cent of the national budget still comes from Australian aid.

Thus finance is a major problem, as are poor communications and a generally low level of education. Distance education exists for grades VI to X through the National Department of Education's College of External Studies and through the University, but as previously stated, only for the first tertiary year. The service provided is of tremendous importance in developing the nation as quickly as possible, without taking valuable workers out of the work force, and allows rapid localization of positions.

Despite the problems, distance education has proved indispensible to the education system in Papua New Guinea. The recent development of provincial centres by the University's Department of Extension Studies, and independently by the College of External Studies, may well be an answer for the future, aiding decentralization and furthering the national goal of equal opportunity for all.

PHILIPPINES

Present status

In the Philippines there is a strong pressure for access to higher education, but as yet there is no system of higher distance education. There are more than one thousand universities and colleges offering tertiary courses, non-degree vocational technical courses, and secondary and primary teacher training courses. Over one million students are enrolled in degree courses, and institutions vary in size from 1,000 to 50,000 students, but 40 per cent of these

institutions are clustered in Metro Manila. Thus the numbers are deceptive in that higher education is not provided evenly throughout the country, and many potential students are denied access.

A concomitant problem is the rising cost of education. Fee levels in all institutions, private and public, are controlled by the government. The financial viability of some institutions has become doubtful in recent years, and as a result valuable courses have been phased out and some facilities have deteriorated.

There is a national entrance examination, but all universities and colleges are also able to administer their own admission tests. This makes admission selective and standards vary depending on the institution's objectives, its offerings and its absorption capacity. Student selection is on the basis of their potential for success in the traditional system.

Two factors indicate the need for an alternate system. First there is the incapacity of public and private universities and colleges to absorb all possible students, through financial and staffing limitations and the lack of balanced regional distribution. Secondly, the present selection methods are structured for admission to the traditional formal higher education system, barring many potential students from degree courses. At present such students are discarded from the system, when in reality they may also be capable of pursuing tertiary study, but through distance education and at their own pace of learning.

Intended developments

One possible alternative is the introduction of higher distance education. Obviously, in the Philippines, this would be complementary to the existing traditional university or college system. As such it would increase the availability of higher education in terms of national development, maximizing human resource development. Further, higher distance education would open up more opportunities for the economically disadvantaged and allow upward social mobility.

There is also the advantage that the many students presently enrolled in evening classes at traditional universities may prefer to take advantage of distance learning if such a facility is available. They could take some, if not all, of their courses under a distance learning system. This would enable them to spread their study and work load in a more opportune way and should also facilitate their progress as students.

Problems and issues

Four factors can be suggested as necessary to make distance learning an actuality in the Philippines. First, it would be necessary to secure the collective goodwill of educators and

administrators, in both the public and private sectors. Second, there would need to be a collective effort to rationalize the management of any distance education system, in terms of curriculum, teaching materials and aids, etc., and to rationalize the establishment of regional distance education centres. Third, funding would have to be assured to make such a system self-sustaining and viable into the future. Fourth, there is a need for regional co-operation among the peoples of Asia and the Pacific for the mutual development of natural assets and human resources.

SRI LANKA

Present status

Sri Lanka has six universities, one University College, two university campuses, and a number of technical colleges and institutions. However, the recent education explosion has made it difficult for the national education system to keep pace with the demand for admission to the existing institutions of higher education. As a result, there have been attempts to search for appropriate patterns to providing education at various levels regardless of sex or age. It is in the light of these problems that the concept of an open university has attracted increasing attention from educationists, politicians and the public.

The concept of an open university for Sri Lanka was formulated by an Act of parliament in 1978 and implemented by the Ministry of Higher Education in 1980.

Future developments

The Open University will be the only institution on the island offering higher distance education. As a developing country, human resource development is crucial in Sri Lanka, increasing the quality of trained manpower and generally improving the lives of the people. The Open University will allow many individuals, previously barred from full-time conventional university studies, access to tertiary education.

The Open University concentrates on two areas of study, humanities and social science, and management, science and technology. A number of regional centres have been established in various parts of the country. These will provide the necessary audio-visual material and library facilities, as well as distribute printed material and provide face-to-face teaching.

Problems and issues

Course materials will generally be written in English and translated into Sinhala and Tamil. This multiple translation is a

formidable task, particularly for science, and translators from established universities are being used to prepare materials. This will ensure the maintenance of academic standards, as will the inclusion of academics from the conventional universities in the Boards of Study of the Open University. Distance education standards will be achieved by employing experienced distance educators and training new staff in the necessary techniques.

Initially offerings will be limited as materials are prepared, and no students will be admitted into courses until preparation is sufficiently advanced. The first task is that of planning, recruitment and development of personnel, and provision of buildings and related facilities. Studies have commenced in foundation courses, certificate courses, diploma courses, and degree courses in science.

The Open University of Sri Lanka is on the brink of a successful future and will bring great benefit to the people of Sri Lanka.

THAILAND

Present status

The development of distance higher education in Thailand began in 1933 with the establishment of a so-called "Academic Market" open-admission university called the University of Moral and Political Sciences. Later renamed Thammasart University, this was converted into a conventional university in early 1960s. Subsequently, two new universities were established, namely Ramkamhang University in 1971 and Sukhothai Thammathirat Open University (STOU) in 1978.

Among Thailand's 14 universities, only two are operating the distance teaching system. These are Ramkamhang University, established as a replica of Thammasart University's open-admission model and Sukhothai Thammathirat Open University, established as an open university. However, there are a few colleges and universities which are experimenting with distance education systems on a smaller scale such as the in-service programme of the Department of Teachers' Training via Radio Correspondence, and Chulalongkorn University's one-year certificate programme in Engineering. Among these institutions, STOU is recognized as the most systemic in terms of utilizing a full distance education system.

To meet the increasing demands for higher education of both working adults and secondary school, STOU uses an integrated multi-media approach for distance teaching. At present, there are 198,000 students in 9 schools namely, Liberal Arts, Educational Studies, Management Sciences, Laws, Health Sciences, Economics, Home-Economics, Political Sciences, and Agricultural Extension and Co-

operative; with the School of Communication Arts to be opened in 1984. STOU will award degrees to the first 9,000 graduates in Educational Studies and Management Sciences in early 1984.

Development trends

Nationally, the development of new distance higher education institutions are not foreseeable, except for the development of already existing Ramkamhang University and Sukhothai Thammathirat Open University. While Ramkamhang University maintains its open-admission policy by using both traditional and distance teaching system, Sukhothai Thammathirat Open University is the only institution which has a definite plan of development to increase the effectiveness of its distance teaching system.

Prior to the establishment of Ramkamhang University, the Thai public was quite skeptical to the quality of graduates produced by the "Academic Market" open-admission university. After Ramkamhang University managed to produce thousands of graduates whose performances are generally well accepted by private and public sectors, the public is no longer doubtful about the quality and standard of graduates from distance education institutions. The quality of STOU graduates is yet to be tested.

Major issues

However, certain issues have to be considered; namely instructional techniques for science and technology courses; minimum qualification of students for admission; and for the Ramkamhang University, whether it should maintain an open-admission policy or become a closed-university or even become fully open with multi-media integration of distance teaching system. And finally, whether Thailand should establish more distance education institutions, since Thailand has already established two universities of this kind.

THE SOCIALIST REPUBLIC OF VIET NAM

Present status

The Socialist Republic of Viet Nam first began higher distance education in 1960, to provide scientific, technical, economic and cultural expertise at the tertiary level. The system was introduced to enable workers of all levels to improve their educational standards without leaving their workplaces, and as a means of rapid national development.

Higher distance education takes the form of in-service training, and now operates through 30 conventional tertiary institutions. This form of education is predominantly aimed at the

youth of the country, some 30,000 students being presently enrolled. Over the last 20 years about 50,000 university degrees have been awarded through this system.

Entrants into the in-service courses must have successfully completed secondary school to a matriculation level (Grade XII) and must also pass the entrance examination of the specific institution. Priority is given to those with the most work experience in their desired course of study.

Students use mainly printed materials supplemented with face-to-face teaching in nearby tertiary institutions or study centres, and study over a longer period than those at traditional universities. The same academic staff are used in both systems but the more experienced internal staff are preferred for the external system. A wide range of courses are available but concentrate on work-oriented subjects such as agriculture, economics, engineering, teaching and science.

Development trends

Priority is given to rapidly increasing the number of these in-service students by flexibility of organization of learning processes. Improvements of the quality of the distance education system are also under way. Where possible, the system is being expanded to make it available in the more remote rural and mountainous areas, and to the Mekong delta regions.

Problems

Paper is scarce in the Socialist Republic of Viet Nam, as are printing presses, roneo and photocopy machines and typewriters. The system depends on the medium of print, and it is crucial that improvements be made in the availability of these key items. There is also a great lack of experimental kits for science courses and generally of audio-visual equipment.

Chapter Three

TWO DISTANCE TEACHING SYSTEMS – DARLING DOWNS INSTITUTE OF ADVANCED EDUCATION AND SUKHOTHAI THAMMATHIRAT OPEN UNIVERSITY

DARLING DOWNS INSTITUTE OF ADVANCED EDUCATION

The Darling Downs Institute of Advanced Education (DDIAE) teaches courses at a distance at Associate Diploma, Degree, and Post Graduate Diploma levels. The courses are in the following discipline areas - Business Studies, Engineering, Mathematics and Computing, Asian Studies, and Education.

Courses are prepared by unit teams made up of academics and instructional designers. Academic responsibility for course content lies with the Dean of the teaching school. Instructional responsibility lies with the Head of the Department of External and Continuing Education. A wide range of teaching techniques is used.

During the workshop, a presentation on the preparation and teaching of the Associate Diploma in Engineering was made to participants. It was considered that this is a course which is not generally taught as part of distance education, but is an area in which a number of countries are interested. A summary of that presentation follows.

Para-professional courses in engineering

The Darling Downs Institute of Advanced Education offers Associate Diploma courses, to be studied at a distance, in civil engineering, electrical engineering, mechanical engineering, and surveying. Each course is programmed into twenty units and is offered over a four-year period externally; each year containing two semesters. A student would be expected to enroll in two or three units per semester, a total of five units per year.

Instructional media

The Department of External and Continuing Education of DDIAE identifies five classifications of instructional media. These five categories, together with suggested sub-divisions, are outlined in Table 1.

Table 1. Available Instructional Media

Personnel Based	Practical Activities	Print Based	Audio-visual Based	Computer - CML Based - CAI
. Tutors (Industrial/ Professional/ Academic) - local - mobile . Telephone/ Satellite Tutorials . Residential Schools -lectures - tutorials - demonstrations - counselling . Study Groups	. Campus Organized - laboratory exercises - field work - demonstrations - industrial visits . Regionally organized (Industrial/ Institutional) - laboratory exercises - field work - demonstrations - industrial visits . Personally organized - home experiment/ construction kits - site visits - log book	. Textbooks . Reference Material . Serial Publications . Study Books - introductory booklets - study books - study charts - work books - manuals - additional readings - reference data . RSVP	. Radio . TV . Films - strips - loops . Slides . Video - tapes - discs . Audio - tapes - discs . Photographs	. Campus . Regional - direct link - indirect link . Personal

Instructional effectiveness and contextual constraints are matters which decide which media are to be used. The DDIAE is currently committed to print-based material as its primary instructional medium. Audio-visual material is used to a limited degree as, too, is personnel based instruction. The para-professional courses in Engineering contain practical activities components which are regarded as an essential element which assist students to achieve the objectives of the course.

The use of computers to assist or manage instruction is passing through a developmental stage to one of implementation. Both direct and indirect links to the DDIAE campus will be used.

Print-based material

At the beginning of semester 1, students receive an orientation package with their initial study material. The orientation package includes a calendar, which clearly indicates important dates of the academic year, and a general information bulletin which outlines a number of aspects of external studies including channels of communication, study techniques, residential schools and assignment transmission.

The study material may include:

- an introductory booklet which contains other than subject content materials such as assessment schemes, assignments, equipment and textbook lists.
- study books containing format, objectives, subject content material, and study activities.
- study charts which suggest study programmes for the semester and reference to content, student activities and assessment schemes.
- problem/work books of exercises, usually of a numerical nature, to which the students are regularly directed.
- RSVP booklet which contains multiple choice questions, the answers to which are scheduled to be received at DDIAE on specific dates and marked using a CML programme.

Modifications to the print-based packages have been made to satisfy the special constraints imposed by students undertaking units through the DDIAE - University of the South Pacific[1] technology project. This programme enables students of the countries serviced by the University of the South Pacific to enroll in some DDIAE based units.

- textbooks are supplied with the other print material.
- drafting equipment accompanies the study books.

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1 The University of the South Pacific is a regional university serving the needs of eleven countries of the South Pacific, Cook Islands, Fiji, Kiribati, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Western Samoa. The university not only operates as a traditional teaching university but at the same time must serve as a polytechnic, a community college and a college of advanced education and a development agency all rolled into one.

There are slightly more than 2,000 students studying at the university's two campuses, at Laucala Bay in Fiji and Alafua in Western Samoa. But almost 7,000 more are involved in some way, through courses, seminars and workshops, operated through the University's Extension Services and outreach programmes.

Audio-visual material

Audio-visual material has limited application in the DDIAE Engineering programme. Radio and television broadcasts are not used for reasons such as the unavailability of broadcast times and the poor or total lack of reception in remote areas. Audio tapes are despatched to introduce difficult and unfamiliar terminology.

A University of the South Pacific variation assists in introducing the unit, bridging international barriers, and in language difficulties in countries where English is a secondary language.

Video tapes, available at regional study centres or through the DDIAE Resource Materials Centre, are produced if instructionally warranted.

Practical activities

Participation in practical activities to enhance the teaching of concepts or principles or to achieve set psychomotor skills is viewed as an essential component of any technology programme. DDIAE offers the opportunity to students to satisfy some of the practical requirements of their course at home and at regionally based centres. The remainder are achieved on campus at compulsory residential schools.

Personally organized activities include:

- construction of electronic equipment which may be used in later units. Component lists are supplied and are purchased personally.
- performance of relatively simple experimental exercises using equipment purchased by the student.
- organization and conduction of industrial visits. Reports are submitted in prescribed format.

Campus organized activities occur at scheduled residential schools. Activities include laboratory exercises, observing demonstrations, industrial visits, and field work.

Regionally organized practical activities for a limited number of units are currently based in three centres - Port Hedland (Western Australia), Mt. Isa (Northern Territory), and Launceston (Tasmania), and operate using either industrial technical or professional engineering staff or institutional teaching staff to supervise, and, in some cases, assess the student's performance. Instructor's guides outline the role of the supervisor. Student manuals itemize the exercises to be performed.

Personnel based

Contact with academic or professional engineering staff occurs via a number of avenues.

Residential schools give the opportunity for academic staff to personalize the instruction during lectures, tutorials and demonstrations.

Telephone tutorials are conducted at scheduled times. A conferencing network enables the Toowoomba campus to be linked centrally with up to six of a possible sixteen regional study centres. Students who are unable to attend the study centre may request a recording of the tutorial.

Satellite tutorials are conducted at scheduled times with the University of the South Pacific and its various regional centres.

The technology programmes offered by DDIAE extends tutorial assistance to its students via an "industrial tutor scheme". Professional engineers in public and private employment are invited to tutor and monitor student progress. Appointment is made after qualifications and experience have been assessed by the Dean of the School of Engineering and after receiving official acceptance of the scheme from the tutor's employer. Tutors are located at various places throughout the States.

SUKHOTHAI THAMMATHIRAT OPEN UNIVERSITY

The idea of establishing an open university arose from the desire to democratize higher education and from the stimulus provided by the concept of life-long education. The increasing demand for higher education during the last decade led Thailand to look for ways of responding to this demand effectively and economically. Consequently, Sukhothai Thammathirat Open University (STOU for short) was established by Royal Charter in September 1978. The University admitted its first batch of students on 1 December 1980.

As an open university, Sukhothai Thammathirat Open University holds to the principle of life-long education, aims at improving the quality of life of the general public, seeks to increase the educational qualifications of working people, and strives to expand educational opportunities for secondary-school graduates in response to the needs of individuals and society.

Organization and administration

Sukhothai Thammathirat Open University is a governmental unit under the auspices of the Ministry of University Affairs, and

its highest administrative organization is the University Council. This Council is authorized to supervise and control all general activities of the University. There is also an Academic Senate which has specific authority concerning the University's academic work.

The offices to provide administrative support for the operation of the University are those of the Rector; Educational Services; Educational Technology; Academic Affairs; and Records and Evaluation.

Academic units

STOU does not follow the traditional practice of organizing a university into faculties and departments. It consists of major Study Areas or Schools. Each School has a Board of Studies of its own. The Board of Studies consists of the Chairman who is the Dean of the School and 3-7 members elected by the full-time staff of that School. Each Board of Studies is in charge of all the academic and administrative matters of the School as well as other assignments entrusted to it by the University Council or the Academic Senate. At present, STOU has 9 Schools:

1. Liberal Arts,
2. Educational Studies,
3. Management Science,
4. Law,
5. Economics,
6. Health Science,
7. Home Economics,
8. Agricultural Extension and Co-operatives, and
9. Political Science.

STOU has also a project to establish a School of Communication Arts in 1984.

Degree programmes

STOU offers two types of study programmes: one for degree purposes and the other for non-degree purposes. Eligible for enrolment as students in the degree programme without entrance examination are:

a) those who have completed 12 years of schooling or the equivalent; or

b) those who have completed 10 years of schooling who have had 5 years of work experience after receiving their certificates and who are over 20 years of age as of December of the enrolment year; or

c) holders of diplomas or degrees of any level, or their equivalent, from institutions of higher education approved by the STOU Academic Senate.

STOU uses a two-semester system and allows its students to earn a degree in 4-12 years. Courses are arranged in blocks to provide an integrated study of interrelated subjects. Each block is worth 6 credits. The number of credits needed for a bachelor's degree is from 132 to 144.

The degree programme offered by STOU is shown in the following table.

Table 1

Degree Programmes by Majors

Schools/Programmes/Majors	Degrees
1. School of Liberal Arts	
At present, no students of its own. Provides foundation courses for other Schools.	
2. School of Educational Studies	
2.1 Four-Year Programme	
(1) Elementary Education	B.Ed (El.Ed.)
(2) Secondary Education	B.Ed (Sec.Ed.)
2.2 Two-Year Programme	
(1) Elementary Education	B.Ed (El.Ed.)
(2) Secondary Education	B.Ed (Sec.Ed.)
(3) Educational Administration	B.Ed (Ed.Ad.)
3. School of Management Science	
3.1 Four-Year Programme	
General Management	B.B.A. (General Management)
3.2 Two-Year Programme	
(1) General Management	B.B.A. (General Management)
(2) Construction Management	B.B.A. (Construction Management)
4. School of Law	
4.1 Four-Year Programme	
Law	LL.B
4.2 Three-Year Programme	
Law	LL.B
5. School of Economics	
5.1 Four-Year Programme	
Economics	B.Econ.

Schools/Programmes/Majors	Degrees
5.2 Three-Year Programme	
Economics	B.Econ.
6. School of Health Science	
6.1 Four-Year Programme	
(1) Health Management	B.P.H. (Health Management)
(2) Public Health	B.P.H.
(3) Nursing	B.N.
7. School of Home Economics	
7.1 Four-Year Programme	
(1) Community Nutrition	B.HE.
(2) Child and Family Development	B.HE.
8. School of Agricultural Extension and Co-operatives	
8.1 Four-Year Programme	
(1) Agricultural Extension	B.AgExt. Coop.
(2) Co-operatives	B.AgExt. Coop.
8.2 Two-Year Programme	
(1) Agricultural Extension	B.AgExt. Coop.
(2) Co-operatives	B.AgExt. Coop.
9. School of Political Science	
9.1 Four-Year Programme	
(1) Political Theories and Techniques	B.A. in Pol.Sc.
(2) International Relations and Comparative Politics	B.A. in Pol.Sc.
9.2 Three-Year Programme	
(1) Political Theories and Techniques	B.A. in Pol.Sc.
(2) International Relations and Comparative Politics	B.A. in Pol.Sc.

Non-degree programmes

For non-degree or "outreach programme" as it is called, STOU offers two types of programmes: (1) joint programmes with other agencies and (2) certificate of achievement programmes.

Joint programmes: The University has also co-operated with various agencies in setting up programmes of personnel development for the respective agencies using the distance teaching system. These co-operative programmes are as follows:

1. Co-operation with the Police Department in establishing a bachelor's degree programme for non-commissioned police officers. The University inaugurated this programme in July 1982.
2. Co-operation with the Department of Local Administration in establishing an education and training programme for staff of the Department as well as for sub-district and village-level administrators and their wives and others who are involved in administrative work. This programme was established in order to increase their knowledge and work capability and improve their leadership capacity for effective local rural development. The University inaugurated this programme in July 1983.
3. Co-operation with the Department of Lands in providing staff development for those who have not received a bachelor's degree in order that they might have better knowledge of the Law. This programme is entitled "Certificate in Land and Property Law" and was inaugurated in July 1983.
4. Co-operation with the Ministry of Agriculture and co-operatives in improving the qualifications of the Ministry's agricultural extension and co-operatives officials.
5. Co-operation with the Office of the National Committee on Elementary Education in developing elementary school administrators throughout the country.
6. Co-operation with the Bangkok Bank Ltd. in training Bank employees to produce self-instructional texts to be used in staff development programmes at the Bank.
7. Co-operation with the Department of Non-Formal Education in establishing "STOU Corners" in provincial public libraries throughout the country in order to provide services for students and the general public.

Certificate of achievement programmes: Besides offering courses in the various schools to students who have the required background, STOU also offers courses to associate students who do not have such a background. This is called the Certificate of Achievement Programme. Associate students are allowed to study one course per semester. The University allows students to take any courses without stipulating any background requirements whatsoever. When students have successfully completed a particular course, they will receive a Certificate of Achievement for that course. Students in this programme use exactly the same materials and sit for the same examination as regular students of the University.

Special features of this programme are that it consumes less time than a traditional programme, the students can enrol in the course while they work and compared to the traditional programme, the students pay less. Moreover, by using the multi-media, the programme can cover a large number of students at the same time.

Some of the disadvantages are that while entries to most of the outreach programmes do not require educational qualification, a section of the students' experience difficulties in studying. This effects the dropout rate of the students. As the system uses the multi-media, it is also limited by the capacity of some media such as T.V. and radio which cannot cover some areas.

Even though most of the outreach programmes have been in operation for only about 1 or 2 years evidence indicates that the training by distance teaching system has been rather highly successful. Many agencies ask STOU to organize special programmes for them.

Methods of instruction

The media: STOU does not have its own classrooms, relying instead on its regional and local study centres to provide study facilities for students in various parts of the country. To help students study on their own, STOU employs distance teaching techniques and uses the following media to impart instruction:

1. main media: correspondence texts, textbooks, workbooks, radio and television broadcast handbooks, etc.;
2. support media: radio and television broadcasts, including broadcasting of video-tapes, and course materials recorded on cassette tapes; and
3. tutorial and counselling sessions at various regional and local study centres.

Linkage with other institutions: Since STOU students are spread throughout the country, the University has set up a national network of regional and local study centres to complement the instruction imparted to its home-based students. These regional study centres are based in existing local educational establishments. Under each regional study centre there are a number of local study centres which provide educational facilities to students in the area. To each local study centre where students can have access to textbooks, instructional materials and audio-visual equipment, at least one instructor will be assigned to provide academic counselling and other services. Academic tutors are recruited from faculty members of existing institutions of higher education in the region. Furthermore, STOU makes use of the physical facilities of local educational establishments as examination centres and local personnel for various related tasks.

Linkage with mass media: To enable its students to study on their own without class attendance, the University uses printed materials as the principal means of providing home-based education and supplements them with radio and television broadcasts, video-tapes and other recorded materials. However, the University will not set up its own radio and television stations. For the purpose of economy it has used the existing radio and television networks of the Public Relations Department and the Mass Communications Organization of Thailand. Of particular importance is the Public Relations Department's radio network for education.

Course production

To produce course materials, the University follows a team approach by setting up a course team which consists of five categories of specialists:

1. Subject specialists not more than 7 persons
2. Media specialists 1 person
3. Evaluation specialist 1 person
4. An editor
5. A secretary

Course team members may be assigned additional tasks as an editor or a secretary. From the beginning, STOU has sought assistance in the preparation of materials from experts of outside organizations and staff members of other Universities whose academic achievements have been outstanding. For printing course materials, STOU also relies on local printers outside the University.

One of the important problems associated with the use of outside experts is the lack of knowledge and understanding about course production for distance students. STOU solves this problem by providing an intensive training for them before they start writing course materials.

From the experience in course production, STOU has realized that many outstanding experts and academic members from outside bodies have joined the course teams and participated in writing course materials. This contributes to the quality of instructional materials. The University gains support and favourable attitude from experts and academic staff of other Universities. Some of STOU materials are also used by other conventional universities. The materials tend to be relevant to practical problems of the students as outstanding practitioners contribute to the writing of course materials. In all these exercises, STOU has learned to make maximum use of existing facilities.

Delivery system

Efficient delivery system is a prerequisite for any successful distance education operation. STOU students are spread throughout the countries. All of the instructional materials are sent to students by mail. The Office of Educational Services is responsible for sending these materials to students. In academic year 1983, STOU mailed 514,000 packages of instructional materials to students in the first semester and 444,000 packages in the second semester.

One of the problems associated with mailing materials to students is the delay. If course writers fail to meet the deadline of submitting the manuscripts to the course team, it causes in turn a delay in printing and mailing. Many planned activities such as tutorial sessions have to be rescheduled due to the delay in mailing materials.

As STOU has a large number of packages, it poses a problem to the postal services. A great deal of planning, co-ordination, and co-operation is needed between STOU and the Communication Authority of Thailand.

So far, STOU is satisfied with the present delivery system. It has learned to make the maximum use of the postal services to provide home-based education to students throughout the country.

Admission and registration system

STOU admits students once a year. Normally the University opens for admission from January through March. Admission and registration is made by mail. Prospective students fill in application forms and mail them to the University together with the postal money order for tuition fees and course materials. Applicants who meet admission requirements are admitted without entrance examination.

One of the big problems associated with admission and registration is the lack of knowledge and understanding about the University among prospective students. The University responds

to this problem by working closely with local study centres to provide information and guidance, and by organizing an orientation for counselling and guidance personnel of secondary school throughout the country. STOU also sets up a hot-line telephone for urgent questions from the students.

Examination system

STOU organizes the final examination in every province in every semester. Those who fail in the final examination have the second chance to take the re-examination. In the first semester of academic year 1983, STOU organized examinations in 86 centres throughout the country, 11 in Bangkok and 75 in the provinces. Examinations are held on Saturday and Sunday. STOU's staff take the examination papers to the examination centres. Staff members of local schools and colleges serve as proctors.

So far, the examination system has been quite successful. It has always been the policy of STOU to make maximum use of existing infrastructures. Local educational facilities are utilized during Saturday and Sunday. It has used the service of local personnel. During the examination day, about 5,000 examination proctors are engaged throughout the country. Without the assistance of these personnel, STOU could not organize the examinations. Another advantage is that the students pay less for travelling and other expenses. As STOU organizes the examination in every province, the examination centres are close to students. They can come to the examination with minimal expense. As the students come for examinations on Saturday and Sunday it does not also interfere with their work.

Students

STOU admitted its first batch of students in December 1980. In that inaugural year there were a total of 82,139 students, including 68 Buddhist monks. In 1982, new schools were added and 69,561 new students were admitted. In 1983, the University admitted 50,110 more students. This brings the total number of students to about 200,000. In the first semester of 1983, there were 11,583 students. Table 2 shows their distribution by schools.

Table 2

Enrolment by Schools, First semester, 1983

Schools	Number	Per cent
Educational Studies	39,950	35.8
Management Science	21,731	19.5
Law	30,392	27.2
Health Science	4,078	3.7
Economics	2,558	2.3
Home Economics	3,841	3.4
Agricultural Extension and Co-operatives	4,941	4.4
Political Science	4,092	3.7
Total	111,583	100.0

With regard to the distribution of students by sex, on the whole the females have a higher participation rate. Students of STOU are mostly adult working people. In 1983, the average age was 26.7 years. From this year, the University started fresh high school graduates in selected schools (not exceeding 10 per cent of total students). Another interesting feature is that 70 per cent of the students are government officials and the rest are in state enterprises and private sectors. The average monthly income of new students in 1983 was US$ 129.

Staff

The University's staff is composed of full-time faculty, full-time administrative staff and part-time staff. In 1983, the University had 106 full-time faculty and 431 full-time administrative staff members.

It should be noted that STOU staff qualifications are quite high when compared with the national standard ratio. The standard ratio of teaching staff holding doctoral, master's and bachelor's degrees as agreed between the Budget Bureau and the Office of National Education Commission is 15:50:35. STOU's ratio 23:77:0. Administrative staff members also have high qualifications. Almost half of them (47.5 per cent) have bachelor's or master's degrees.

Assistance in the preparation of materials and other services has also been sought from experts attached to outside bodies and staff members of other universities whose academic

achievements have been outstanding. This assistance which is of great importance to STOU has been arranged through borrowing, contracting, or hiring on a full-time or part-time basis. For example, the University has invited approximately 1,000 co-writers and 2,000 part-time tutors from universities and various agencies to serve as course producers and provide supplemental instruction to students.

Graduates

In the 1983 Academic Year, students in the two-year programmes admitted for the first time in 1980-1981 will comprise the first batch of graduates. The Table below shows the number and percentage of students who successfully completed their programmes.

Table 3

Number of students and graduates

Schools/Programmes	Number of Students (1980-1981 cohort)	Number of Graduates (in 1983)	Percentage of Cohort
Educational Studies (2-Year programmes)	68,426	6,018	8.8
Primary Education	25,960	2,058	7.9
Secondary Education	23,351	1,866	8.0
Education Administration	19,115	2,096	11.0
Management Science (2-Year programmes)	6,805	931	13.7
Construction Management	6,805	931	13.7
Total	75,231	6,949	9.2

From the above table, it can be seen that on the whole, about 9 per cent of the cohort complete their studies within the minimum specified time. It is expected that approximately 1,000 additional students will finish in the special semester. This would raise the graduate percentage to about 10 per cent of students cohort.

For the first batch of graduates, there will be no problems of graduates unemployed, as all of them are adult working people. Many of these graduates have passed the graduate examination and been admitted to graduate schools. This could be one of the

indicators of the quality. As working adults, STOU graduates have additional qualifications and experiences which will enhance their opportunities for professional advancement.

Future programmes

The University plans to establish the School of Communication Arts in 1984. The School will be responsible for curriculum and instruction in the field of communication arts such as journalism, radio and television, movies, advertisement and public relations. A bachelor's degree in communication arts will be offered.

The University also plans to offer programmes in sciences and technology. A committee has been set up to look into the possibility of providing both degree and non-degree programmes in these areas.

STOU also plans to move shortly from its temporary locations in Bangkok to a new campus in Nonthaburi, about 25 kilometres from Bangkok Metropolis.

Chapter Four

PLANNING, OPERATING AND EVALUATING A DISTANCE EDUCATION SYSTEM

1. Introduction

This introduction has its main focus on the instructional system which is considered to be the key factor in any distance education operation and which perhaps more than anything else makes it unique. The comments are aimed primarily at administrators of institutions who are in the early stages of planning a new distance education system. The comments are relevant to both single purpose distance education institutions and existing institutions in the process of establishing a division of distance education. This could also provide the basis of a reassessment of certain critical features of well-established distance education operations and indeed the structure of institutions of higher education in general.

Each institution involved in distance education must inevitably respond to a variety of local influences and come up with a pragmatic operational system, matched optimally to its own context. More often than not, certain overriding practical, economic, social, or political factors will dictate the use of particular delivery systems and thereby delimit choices amongst instructional media. Despite these differences in operational systems, distance educators are joined together in a common purpose. Distance educators share a common mission - that of extending educational opportunities to a great many people who would otherwise have difficulty in gaining ready access to education. As well as a common mission, however, distance educators have also a common need. Distance educators have a common need for effective instructional systems.

It could be argued that the essence of all education systems is teaching and learning and therefore all such systems have a common need for effective instruction. While few people would disagree with this point of view, the need for effective instructional systems is particularly significant in distance education, because distance education is different from other systems of education. It is different because in distance education a permanent record of instruction is created, unlike the transient nature of most aspects of conventional education, in which there is no permanent record of the instruction delivered. Not only is instruction in distance education permanent, it is also public. The availability of a permanent record opens the way for critical public scrutiny and the

subsequent public evaluation of the educational process in a manner never previously encountered by teachers working in conventional systems of education.

Distance educators can view the existence of such a permanent public record of instruction as either an opportunity or a threat. Either way, it is certainly a challenge. It is a challenge to improve the quality of teaching and learning in higher education. On the one hand, it is an opportunity to liberate both teachers and learners from the much criticized lecturing grind of traditional face-to-face teaching. It is an opportunity to immerse both teachers and learners in a rich instructional experience based on a wide range of carefully planned learning experiences. On the other hand, it is a threat to the continued healthy development of distance education. If institutions are unable to respond to the challenge of producing good instructional materials and produce only poor quality materials, the lack of instructional quality will be exposed publicly time and time again. Such a lack of instructional quality could lead to the ultimate demise of distance education. In reality, distance educators have no choice, they must respond to the challenge. The existence of a permanent public record of instruction demands that distance educators develop instructional materials of the highest quality.

The need for effective instructional materials frequently leads distance educators to ask the question: "What is the best instructional medium?" While there is a certain virtue in using a variety of instructional media, the question of the best medium is not critical, since there is no best medium of instruction. Each instructional medium has certain distinctive characteristics which make it potentially useful in particular circumstances, but the extent to which this potential is realized depends on the expertise of the teacher. Ultimately, the quality of instruction depends more on the instructional expertise of the teacher, than on any inherent quality of the instructional medium per se. In short, there is no best instructional medium, there are only good and bad teachers.

A more important question for distance educators to ask is: "How can we best exploit the available instructional media?" Fortunately, the answer to this question has a common core, which is applicable to all instructional media. The answer lies in the relatively recent but rapid emergence of Behavioural Science and especially the area of specialization of instructional technology. Modern instructional technology presents distance educators with the opportunity to significantly improve the quality of instruction in higher education.

The emergence of instructional design techniques for analysing the structure of subject matter; assessing the critical learning attributes of students, specifying clearly required learning outcomes,

selecting appropriate learning experiences in a carefully delineated sequence and designing appropriate assessment instruments with associated diagnostic-remedial support systems has created the potential for a significant improvement in the quality of teaching and learning in all systems of education.

The fact that there has been no noticeable impact of these potentially powerful and sophisticated instructional technologies is due largely to the tradition-bound organizational structures of conventional education. In the main, educational administrators in colleges and universities have remained committed to traditional reward structures which promote research and publication rather than good teaching. There does not appear to have been any concerted effort to attack the problem of implementing institutional change in the service of better instruction. Herein lies the opportunity for distance educators, especially those embarking upon the initial establishment of a distance education system. Relatively unimpeded by traditional organizational structures which protect outmoded reward structures, and which foster old technologies, distance educators establishing a new system have the opportunity to exploit the substantial practical alternative, recently made available by the emergence of instructional technology. The administrators of new systems of distance education have the opportunity to create a new organizational infrastructure, capable of supporting the production of instructional materials of the highest quality.

The proposed infrastructure should also cater for the needs of teaching staff. With the emergence of instructional technology, it has become increasingly evident that subject matter experts in the various disciplines do not know how to teach. Add to this the public dimension of distance education, which demands that teachers emerge from the privacy of their own classrooms and display their teaching abilities to a wider audience, which includes their peers as well as their students, and it is not surprising that many teachers involved in distance education feel somewhat threatened. In the new infrastructure, then, there is a need to provide support for academics experienced only in traditional face-to-face teaching, who find themselves thrust (like the emperor without any clothes), into the public arena of distance education.

What then are the essential attributes of the proposed new infrastructure? Bearing in mind that any radical departure from existing traditions is unlikely to receive support, the basic first step required is to adopt a course team approach, whereby a number of teachers rather than a single academic is made responsible for the development of a course. After all, there is a certain safety in numbers and the threat of the public arena is more readily accommodated when the responsibilities for producing a distance education course are shared.

An increase in the number of teachers working on a course is not sufficient to change significantly the quality of instruction. In general, subject matter experts simply do not have the sophisticated instructional skills required to produce distance teaching materials of a high quality. They need the assistance of experts in instructional design - the scientists and technologists, whose professional discipline is the instructional process. It is the addition of competent instructional designers to the course team that is the single most critical element of the proposed new infrastructure. Only with the systematic deployment of the new instructional technologies will there be any chance of a significant improvement. Depending on the range of available instructional media, it could also be desirable to add to the course team relevant specialists in media, including perhaps audio producers, video producers, graphic artists, and editorial staff. But without the specialist input of instructional designers, there is a danger that sub-standard instruction will be given a technical and artistic veneer that deludes the public, though not the student, into believing that a quality product is being made available. In short, instruction is a complex process requiring the diverse inputs of a multi-disciplinary team of specialists. The proposed new infrastructure should attempt to create an organizational structure that will support such a multi-disciplinary approach.

An essential characteristic of the necessary infrastructure is the re-orientation of traditional organizational structures, roles, and responsibilities away from patterns and reward structures that assume that the essence of instruction is its content. It must be acknowledged that the subject matter expertise that is currently accorded the overwhelming responsibility for instruction is only part of the total process.

Throughout history, it has been assumed that the essence of instruction is subject matter content, and therefore the subject matter expert has always assumed authority. Because of this traditional authority, there is a danger that instructional design experts will find themselves in a subordinate position with the major responsibilities for teaching still lying with the subject matter expert. It is critical to the success of the distance education venture that the infrastructure creates the organizational structure for a democratic exchange between subject matter and instructional design experts. In short, instructional designers should have the same appointment status and working conditions as subject matter experts. Some institutions have attempted to maximize the impact of instructional design experts by creating an infrastructure which institutionalizes a division of responsibilities within the course team structure, whereby subject matter experts are made responsible for the determination of what to teach, whereas the instructional design experts are made responsible for how to teach. While such an organizational strategy may not be

possible in all institutions, the opportunity for improving the quality of instruction in higher distance education will not be grasped unless an infrastructure can be created that maximizes the impact of instructional design specialists.

It has been emphasized that distance educators share both a common mission and a common need: a common mission to extend educational opportunities, and a common need for effective instruction. If distance educators are to continue the pursuit of their mission with increased efficiency, they must first satisfy their need for effective instruction. To do this, they must break away from the traditional academic infrastructure, wherein patterns of authority are related to the content of, rather than the process of, instruction. The administrators of institutions involved in distance education have the opportunity indeed, have the responsibility, to create an organizational infrastructure that exploits the power and sophistication of the new instructional technologies. It is time for distance educators to lay the foundations for an increase in the efficacy of the instructional process, thereby creating a new academic tradition.

2. Planning the distance education system

What is the general context in which planning is being undertaken?

2.1 Needs and goals

Planning for higher distance education should be based on the identification of social, economic, and personal goals that cannot be achieved by existing services.

Questions	Considerations
Why is your country interested in establishing distance education at a higher level?	Distance education should promote greater national equality.
Have particular social, economic, personal needs been identified that can only be met by distance education?	maximize access across the country for all students who meet university entrance requirements.
Are there existing groups to be served by the distance education system, or are new groups identified?	provide vocational and technical training to assist national development.
What does your country aim to achieve by instituting higher distance education, that cannot be achieved by other means?	retrain persons on-site without removing them from their present work. contribute to the goals of national development.

2.2 Demography

Planning for higher distance education should take account of the characteristics and distribution of population.

Questions	Considerations
What is the total population, and what proportion lives in rural areas?	Distance education planning needs to take account of relative youth of populations. language differences in population. remote locations of students. centralization of the educated. high per cent of populations in rural areas. special effects of climate. urban drift. "exporting" of skilled manpower. male/female ratios.
Is the rural population increasing/decreasing?	
Are there distinct regions, identifiable by geography, social, or language groupings, etc.?	
Are there distinct languages/ dialects, and is there a common language (lingua franca)?	
Are the "best-educated" spread throughout the country, or centralized in main centres?	
What proportion of the population will be involved with the distance education system?	

2.3 Services

Planning for higher distance education should take account of the services already available, and those likely to be available in the future.

Questions	Considerations
How regular/reliable is the mail service? Will it be by air, land, sea, etc.	Mail services are reliable in most countries even if lengthy in some because of factors such as monsoons and villages distant from main roads.
Is electricity available throughout the country? In all homes, public buildings, etc.?	Electricity is available in at least most public/community buildings.

Questions	Considerations
How regular is transport from rural to urban?	Transport systems are relatively reliable in most countries.
Is the telephone network extensive? Reliable?	Telephone networks are typically extensive in urban areas but not outside these areas.
How readily available are broadcast radio? Television? Satellite?	Broadcast facilities exceed reception facilities in some countries. While broadcast facilities exist these are not always available to distance education (cost).
How readily available are cassette recorders, videotape recorders, home computers, etc.?	Most public/community facilities have reception capabilities.
	Rural areas and remote areas have least developed infrastructures (but many students - see Demography).
	Radio is available in all countries (transistors rechargeable).
	All students both face-to-face and those studying at a distance must be seen to be treated equally.
	It may be possible to use military and paramilitary networks.
	Study centre can be an important element in distribution.

2.4 Present provisions

Planning for higher distance education must take account of existing provisions for education in general and distance education in particular.

Questions	Considerations
What proportion of the population presently completes secondary education?	Small proportions of populations complete secondary education.

Questions	Considerations
What proportion of these presently receive tertiary education?	Smaller proportions complete tertiary education and some of this is "exported".
How many institutions presently offer higher education?	In some countries, at least one institution per country offers distance higher education.
How many of these presently offer distance education courses? Where are these institutions located?	Few staff in institutions are trained in teaching at a distance.
Are there specialized institutions that provide for the whole country in their specialized field?	
Are staff in existing institutions trained for teaching at a distance?	

2.5 Finance and resources

Planning for higher distance education must take account of the cost of all operations, and the availability of provision of suitable resources.

Questions	Considerations
How is education financed, and will distance education be financed similarly?	Institutions appear to gain flexibility in planning where finance is not provided wholly by government.
What space and buildings will be needed? Do any of these exist?	As well as resourcing institutions payment of fees can motivate students.
What personnel can be afforded in teaching? Administration? Do any of these exist, or will they have to be recruited and trained?	Managerial and administrative flexibility in respect of variations in instructional techniques used and delivery systems employed as a vital resource.

Questions	Considerations
What media can be afforded? Do any of these exist?	Choice of delivery systems should take into account both ideal systems (as goals to be achieved) and existing systems as pragmatic options for the present. Student tuition fees are a necessary resource enabling innovation in system development. The significance of study centres as part of a distance education delivery and feedback system is important. Mobile teams of specialists used for upgrading existing staff can make the system more efficient.
Is finance assured for the continuing support of systems, once established?	
Will finance be best applied to adapting existing resources or to creating new ones? Or both?	

2.6 Priorities and time-scale

Planning for higher distance education should be based on an explicit set of priorities and an achievable time-scale.

Questions	Considerations
What priorities have been stated by government, ministry, advisory committee, etc., for institutions?	Language translation. For primary teachers. For literacy workers. For secondary teachers - science, mathematics, English, vocational technical. Competency-based training. Certificates, diplomas, degrees.
programmes?	
target clientele?	
What operations should be achieved in one year? two years? five years?	

What is the specific context in which planning is being undertaken?

2.7 Institutional model

Planning for higher distance education should consider the features of different institutional models and the capability of existing institutions to adopt new modes of teaching.

Questions	Advantages of Institution Using an Integrated System
What advantages are there in an institution offering both internal and distance teaching? (integrated model)	maximizes equality of treatment. maximizes similarity of standards. has teaching benefits to teachers and thus to students. maximizes cost savings in production and use of materials. utilizes face-to-face regional centres and external materials.
Are there existing institutions which could adapt to the integrated model? Will new ones have to be established?	
What advantages are there in an institution offering distance teaching exclusively? (separate model)	Advantages of a Single Purpose Institution selection of committed staff easier. ease of training new staff. specialization of staff. actually develops distance teaching materials not just using textbooks used by face-to-face students. no role conflict for staff.
Are there existing institutions which could adapt to the separate model? Will new ones have to be established?	
If there is to be inter-institutional co-operation how will this be co-ordinated?	

2.8 Target clientele

Planning for higher distance education should identify the social, educational, and economic characteristics of the clientele of learners expected to undertake courses.

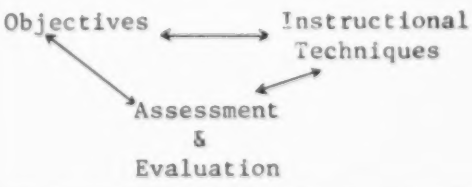
Questions	Considerations
What is known of the age and experience of the target clientele? Are they adults? Youth? Are they in the work-force? Are they being trained for entry to the workforce?	Target clientele women. city workers admitted to distance education courses, reduces travel and city congestion.

Questions	Considerations
What is the level of previous academic performance? Will non-academic criteria for entry be considered?	vocational needs. disadvantaged. rural population.
Where are target clients located, and what access will they have to support systems (mail, libraries, AV aids, etc.)?	
Are there language, sex, and other cultural factors to be considered?	
What are the reasons for the clients wanting to study and what will they expect to get out of it?	
Will there be priorities for entry to courses, e.g. remoteness, access to supervision, etc.?	

2.9 Teachers

Planning for higher distance education should consider the source and training of suitable teaching staff.

Questions	Considerations
Will distance teaching be added to the duties of existing staff?	Need for teachers with an interest in teaching adults. Need for consistent philosophy and commitment to team work, and to distance education. Be cautious about teachers allocated to programmes simply because they are recent graduates. Negative/conservative belief systems of internal teaching staff.
Will special teachers be recruited for distance teaching?	
Will teachers be full-time, part-time, or on variable term contracts?	

Questions	Considerations
What criteria will be used for appointing staff for distance teaching?	Need for specialist training of staff who will be engaging in distance teaching - knowledge and skills, attitudes and beliefs. Learning on the job necessary but not desirable as the only form of training. Team approaches to preparation/ design of materials necessary - the design task is beyond the abilities and working conditions of an individual. Use outside content/subject matter specialists on contracts as necessary. Good internal teachers may fail to become good external teachers if training in knowledge and skills only is employed. Recruit (on contract) well respected academics as members of course teams. This produces perceptions of high standards. persons with good reputations who function as advocates of the institution. Consider payments to writers of materials even where these persons are full-time staff. All instructional design capabilities should be present in a single person, i.e. knowledge of and skills in 
What training in distance teaching will be needed?	

2.10 Curriculum

Planning for higher distance education should consider relevant curriculum factors such as courses to be offered and teaching methods to be used.

Questions	Considerations
What types of courses will be offered, and in what sequence? Are there priorities? (e.g. for technology, agriculture, general education)	Distance education is not a universal panacea for all social, economic, educational ills. Curriculum should be more flexible than traditional disciplinary institutions, i.e. problem-centred. Curriculum must be consistent with needs of the country. Short courses, long courses. Cost benefit of media to be used.
Will courses be short (specific skill/knowledge, etc.) or longer (more professionally oriented)? Will qualifications be granted?	
What teaching methods will be used? All distance methods or some face-to-face? Will this be on-campus, using local tutors, or will staff travel to students?	
What language(s) will be used?	
Will specialized equipment be needed, and how will students obtain it?	
Will the teaching style be didactic or interactive? How much and what type of feedback will be provided for students?	

2.11 Standards

Planning for higher distance education should consider how acceptable standards are to be established and maintained.

Questions	Considerations
What will be the entering standard of students?	Standards need for outside moderation

Questions	Considerations
What will be the minimum qualifications of teaching staff?	need for evaluation teacher's qualification comparable with their counterparts in traditional system
What range of qualifications will be offered, and how will comparability with other similar qualifications be ensured both locally and internationally?	
Will there be outside moderation of standards?	
What forms of evaluation will be developed to ensure consistent standards?	

3. Operating the distance education system

3.1 Preparation, production, delivery

This section covers the teaching process. Initially, it is concerned with preparation, production, and delivery of teaching materials. It lists many teaching techniques. An institution must choose the most cost-effective method, e.g. DDIAE would like to use more television, but it is too expensive in this country. An institution should strive for the cheapest effective method of teaching. Once the appropriate teaching techniques have been selected, the institution must decide the best organizational structure to produce the materials for these techniques, e.g. unit teams as opposed to teachers working individually. Consideration should always be given to the possibility of co-operation with other institutions if this means a saving in resources.

Teaching Technique	Considerations		
	Preparation	Production	Delivery
1. Specially written study books (inc. introductory booklets and study charts). Supplementary notes for other media. Books of Readings.	Availability of local writers (imported writers). Availability of instructional designers (imported I.D.'s). Can existing materials be purchased? (translation problems) Copyright. Editing. Graphic Artists. Photographers. Is the unit team approach to be used? Monitoring of teams. Instructional design quality and academic content responsibility?	Reproduction facilities - printing. Scheduling of production. Time constraints on writers (writing, editing, proofing). Production based on quotas. Time constraints on production area. How often can materials be revised? How big is each print run? Storage and cost. Specialist staff.	Post and Courier. Regularity and reliability. Adequate packaging. Cost.
2. Textbooks already published.	High purchase price. On-going availability.		
3. Journals/ Newspapers.	Availability. Cost.		
4. Experimental handbooks (log books).	Technical knowledge. On-site supervisors. Equipment availability.		
5. Slides Filmstrips Film	Technical expertise. Instructional expertise.	Studios.	Student access to replay equipment.
6. Videotapes Audiotapes	Technical expertise. Instructional expertise.	Studios. Need for long-term planning.	Student access to equipment. Are audiotapes to be returned for reuse? Packaging
7. Radio broadcasts T.V. broadcasts	Technical expertise. Instructional expertise.	Studios. Need for long-term planning.	Fixed time requirements. Broadcast and receiving equipment. Transient nature of broadcasts (need for supplementary material).
8. Telephone/ satellite tutorials	Teachers. Build into lessons. Respond to requests.	Need to schedule ahead. Availability of study centres. Co-operation of telephone authorities. Should they be recorded for wider distribution?	Loudspeaking telephones.

Teaching Technique	Considerations		
	Preparation	Production	Delivery
9. Computing facilities.	Technical expertise in courseware preparation. Use for teaching data processing and systems, or for computer based learning, or computer managed testing.	Compatability of equipment.	Technical expertise in hardware/software. Computer facilities on-campus and at study centres.
10. On-campus residential schools.	Teachers. Practical Books. Compulsory or voluntary. Duration.		Accommodation and teaching facilities. Travel requirements/ cost for students. Experimental equipment, tools.
11. Off-campus residential schools.	Teachers/supervisors. Practical Books.		Teaching facilities. Travel and accommodation.
12. Fieldwork.	Supervisors.	Liaison with institution.	Suitable co-operative firms. Experimental equipment/tools.
13. Self-help study groups.	Leaders.	Assistance from institution.	Study Centres.
14. Experimental kits.	Designers (academic and instructional).	Technicians.	Cartage. Breakage. Co-operation of others in the home, power, water supplies.
15. Off-campus tutorial assistance.	Supervisors.		Study Centres.
16. General points.	Print is seen as the preferred single best medium for instructional and logistic reasons - do not be over-impressed with technology. The course team structure is regarded as essential. There is a need to differentiate roles and responsibilities of: academics, educational technologists/ instructional designers, editors, etc.	The main problems are a lack of control over outside writers, lack of commitment of academics to meet deadlines. There is a need for regular monitoring of preparation and production schedules. There is a need for regular reminders of deadlines for academics.	The delivery system should capitalize on established, traditional, personalized networks (e.g. to study centres for local collection, distribution, etc.).

Teaching Technique	Considerations		
	Preparation	Production	Delivery
	Course teams need to engage in planning and development prior to writing/production of materials. Educational technologists/instructional designers should have the same status and salary as academics. Most academics need training to teach effectively at a distance. Suggested approaches: course team, seminars, workshops, self-instructional materials, use of model materials of excellent quality.		

3.2 Student support

Techniques	Considerations
Continuous assessment with feedback	All types of regular assessment feedback assumes an efficient communication system. Relatively quick turnaround. Need to monitor flow and turnaround (manual or computer). Examination Centres/Supervisors. Computer managed assessment, cheating, information.
Local tutor support	Availability of suitable persons. Raise student costs. Need to brief, train, and monitor part-time staff.
Guidance and counselling by telephone, mail	Availability of counsellors. Finding students who need guidance.

Techniques	Considerations
Enquiries/complaints	Need for quick turnaround. Need to monitor (yellow forms). Whose responsibility (report forms). (Mail turnaround register)
General points	The best support is quality materials which are not totally dependent on other aids, institutional feedback, etc. The local support can circumvent total dependence on regular delivery systems. The main centre can produce 'master' materials, then send to local centres for reproduction, distribution, support. There can be problems of providing adequate student support if timings are right (e.g. semester vs year) and assignment demands high. It is easier to organize academic support than personal contact between remote student and lecturer, therefore local support important from existing local institutions. Problems can arise with slow or poor marking of materials by instructors.

3.3 Administrative services

Techniques	Considerations
Overall system	
Technological Manual/Technical Manual	Is adequate skilled labour available? If inadequate skilled labour available, then can unskilled labour be trained?

Techniques	Considerations
	Should skilled labour be imported? What is institution policy on staff? Is technical support available? Should emphasis be placed on capital or labour? Social consequences resulting from use of technology. Are specialist buildings available for technology?
Course publicity Posters Papers Radio T.V. Employers Sport Arenas/Billboards	Will quotas be met irrespective of publicity? Are we striving to reach every person? By using any one medium, will we be reaching only a select group? Are there any cost constraints? Should publicity be attractive/ eye catching or informative?
Enquiries	What details should be recorded? Is return material available? Turnaround time to be minimized.
Enrolment Offer, registration, acceptance/rejection, enrolment confirmation	Recording of enrolments. Have quotas been achieved? Should unsuccessful candidates be placed on a waiting list? Are any time constraints applicable? Do guidelines exist for assisting decision making, e.g. exemption claims? Are enrolments accepted without full documentation being enclosed? Can students from outside your country apply? Are restrictions placed on students living in inaccessible areas?

Techniques	Considerations Are units varied without consultation with students?
Examinations	
Venues	How many students to sit for exam?
Supervisors	Is timetable clash-free?
Security	Notification of students.
Distribution	Are suitable examination rooms available?
Return	Proximity of nearest exam centre to student.
Recording of Results	Are reliable supervisors available?
Notification of Results	What security exists for papers (exam and scripts)?
Student Progress	Will exam papers be able to be returned speedily?
	Marking, recording results and notification to students.
	Analyse student progress - eligibility to continue/ graduate.

4. Evaluating the distance education system

4.1 Process evaluation

Process evaluation involves gathering data on whether the components of a system are functioning as expected to answer such questions as:

why only certain objectives are being met in particular courses?

why only a certain proportion of students are graduating in minimum time?

why audiotapes provided in students' study materials are not being used?

why turnaround time on student assignments is longer than expected?

why costs are higher than expected in a production sub-system?

For example, process evaluation of an administrative support sub-system, might indicate ways in which student

records could be used to better indicate to a production sub-system how many packages of student materials need to be produced. This could produce cost savings in the production sub-system.

Questions	Considerations
What is the focus of evaluation?	
What elements of the system need evaluation? For example, delivery sub-system - mailing - receiving student assignments student support sub-system - quality of feedback provided - turnaround time for marking throughput - costs/graduating student - student drop-out course preparation sub-system - effectiveness - cost	Is the focus on total system or sub-system components? Is the focus on student outcomes or system outcomes (product evaluation)? Is the focus on the functioning components of the system (process evaluation)? Is the focus on system effectiveness? Is the focus on instructional effectiveness?
What is the scope of evaluation?	
How much of the total system is to be evaluated? How deep is evaluation to be? For example, total production sub-system including scheduling, purchasing of material, utilization of resources, roles and function of staff, production flow over time, technical quality of products, effectiveness of quality control mechanisms, etc.	What scope of evaluation is desired/feasible? Consider the institutional effects of resources (human/material/time) on feasible scope. Consider the effects of time to complete study on scope.

Questions	Considerations
What information is required? For example, Information about processes. How does a particular sub-system operate - e.g. course preparation system - how does this compare with how it is planned to operate. Information about products. How many students pass all first year courses in minimum time.	What decisions can evaluation usefully service? What decisions will be influenced by inputs from outside institutions? What form of evaluation will be most useful to decision makers? Consider - evaluation by decision makers - evaluation by separate unit within institution - evaluation by unit outside institution - levels within distance education system at which evaluation is to be carried out. How are information needs to be made known to evaluators if evaluators are a separate group?
What resources are needed to support evaluation? For example, if the student support sub-system were being evaluated what resources would be needed to accomplish this at the required scope and provide the information required.	Financial resources. Time expended on this task. Staff expertise and skills. Resources are needed to analyse information collected. Attitudes of staff. Organizational attitudes to evaluation.
What costs can be expected to be associated with evaluation? Evaluation may be perceived as threatening by some persons. Consider the case of an evaluation of the student support system. Here data	Perceived threat and effects on the functioning of the system. Allocation of resources to evaluation - these could be allocated elsewhere.

Questions	Considerations
might be gathered on such things as quality of feedback to students on assignments, turnaround time on assignments, and quality of support at regional study centres. This might be seen as threatening by the staff discharging these functions.	Need to institutionalize evaluation. How can this be accomplished? Should evaluation be a formal compulsory part of the total system, or should evaluation be optional? Consider resource implications.

4.2 Conducting process and product evaluations

Outcomes

exploration of means of ensuring that data required are collected.

awareness of variety of methods available to collect data.

consideration of means of ensuring that evaluation reports are acted upon.

consideration of criteria which evaluations should meet if they are to be effective.

Questions	Considerations
How can it be ensured that all data required are collected?	
For example, will a single individual whether decision maker or evaluator, be sure enough of precisely what data is required? If the student support sub-system is the subject of an evaluation, should staff from this system be involved in determining data to be gathered?	The use of systems diagrams and flow charts to help identify data required. These could assist by The use of particular techniques to maximize the range of inputs as to data required. Techniques such as: Prioritizing data collection tasks in terms of urgency importance feasibility of collection Relationships between evaluators, decision-makers and audiences for evaluation reports. The role of

Questions	Considerations
	evaluators in determining data to be collected should be The role of decision makers in determining data to be collected should be The role of audiences of evaluation reports in determining data to be collected should be
What methods are most feasible for collecting and analysing the required data? For example, if regional study centres are used, it may be possible to have regional staff in these centres distribute and ensure the return of questionnaires to all students, then trying to ensure their return.	Advantages and disadvantages of particular methods in particular situation in terms of: speed cost accuracy (validity) Optimal use of existing resources, such as: sources of information, such as: literature,) students, expert judges) authors of within institutions,) materials, expert judges) instructional from outside) designers, institutions) Unesco personnel, personnel from other institutions Existing data from institutions and government agencies unobtrusive sources such as: use of resources (e.g. library) by students

Questions	Considerations
	Social/economic indicators in appropriate sections of the community where students' new knowledge and skills would be expected to have effects, such as: improvements in agricultural production improvements in maintenance of machinery Means of collecting data quantitative (statistical approaches) such as, surveys, qualitative (non-statistical approaches) such as, student letters, other communications. Advantages and disadvantages of a single method being almost always used - such as surveys. Advantages and disadvantages of trying to obtain more than one measure in a particular area, such as surveys of students plus reports of those who make use of students skills and knowledge. Data analysis techniques. What resources are needed? What resources exist? What is the optimal use of these resources?
How can it be ensured that information collected is acted upon? For example, it is possible that an excellent, potentially useful evaluation study can be conducted but not be disseminated or even if disseminated, not be acted upon.	What criteria will persons involved apply when judging evaluations, such as: understable. logical. objective.

Questions	Considerations
	How best can evaluation reports be disseminated and what may be the effects on dissemination of "ownership" of reports or data? Techniques considered could be: group meetings. How can action on evaluation reports best be ensured through legislating for action. making action optional. encouraging action. What may be the effects of particular approaches to ensuring action?
What criteria will evaluation studies have to satisfy to be useful to the distance education system? For example, evaluations, no matter how potentially useful, may be accepted and rejected on various grounds by various persons. Any evaluation which is not acted upon wastes resources.	Will criteria typically applied to research studies be applied to evaluation? Criteria such as, validity. Which of these have the highest priority? Will practical criteria be applied? Criteria such as: resources utilized costs timelines Which of these have the highest priority? Will particular groups or sub-systems have particular criteria which evaluation should meet? Criteria such as apparent objectivity